



## GLOSSARY

**Absorption fraction (percent absorbed)** - The relative amount of a substance that penetrates through a barrier into the body, reported as a unitless fraction.

**Accuracy** - The measure of the correctness of data, as given by the difference between the measured value and the true or standard value.

**Activity pattern (time use) data** - Information on activities in which various individuals engage, length of time spent performing various activities, locations in which individuals spend time and length of time spent by individuals within those various environments.

**Air exchange rate** - Rate of air leakage through windows, doorways, intakes and exhausts, and “adventitious openings” (i.e., cracks and seams) that combine to form the leakage configuration of the building envelope plus natural and mechanical ventilation.

**Ambient** - The conditions surrounding a person, sampling location, etc.

**Analytical uncertainty propagation** - Examines how uncertainty in individual parameters affects the overall uncertainty of the exposure assessment. The uncertainties associated with various parameters may propagate through a model very differently, even if they have approximately the same uncertainty. Since uncertainty propagation is a function of both the data and the model structure, this procedure evaluates both input variances and model sensitivity.

**As consumed intake rates** - Intake rates that are based on the weight of the food in the form that it is consumed.

**Average daily dose** - Dose rate averaged over a pathway-specific period of exposure expressed as a daily dose on a per-unit-body-weight basis. The ADD is used for exposure to chemicals with non-carcinogenic non-chronic effects. The ADD is usually expressed in terms of mg/kg-day or other mass/mass-time units.

**Best Tracer Method (BTM)** - Method for estimating soil ingestion that allows for the selection of the most recoverable tracer for a particular subject or group of subjects. Selection of the best tracer is made on the basis of the food/soil (F/S) ratio.

**Boneless equivalent** - Weights of meat (pork, veal, beef) and poultry, excluding all bones, but including separable fat sold on retail cuts of red meat.

**Carcass weight** - Weight of the chilled hanging carcass, which includes the kidney and attached internal fat (kidney, pelvic, and heart fat), excludes the skin, head, feet, and unattached internal organs. The pork carcass weight includes the skin and feet but excludes the kidney and attached internal fat.

**Chronic intake** - The long term period over which a substance crosses the outer boundary of an organism without passing an absorption barrier.

**Comparability** - The ability to describe likenesses and differences in the quality and relevance of two or more data sets.

**Consumer-only intake rate** - The average quantity of food consumed per person in a population composed only of individuals who ate the food item of interest during a specified period.

**Contaminant concentration** - Contaminant concentration is the concentration of the contaminant in the medium (air, food, soil, etc.) contacting the body and has units of mass/volume or mass/mass.

**Creel Census** - Approach used by fishery managers to obtain harvest data collected onsite from single anglers or from larger-scale commercial type operations.

**Deposition** - The removal of airborne substances to available surfaces that occurs as a result of gravitational settling and diffusion, as well as electrophoresis and thermophoresis.

**Diary study** - Survey in which individuals are asked to record food intake, activities, or other factors in a diary which is later used to evaluate exposure factors associated with specific populations.

**Distribution** - A set of values derived from a specific population or set of measurements that represents the range and array of data for the factor being studied.

**Dose** - The amount of a substance available for interaction with metabolic processes or biologically significant receptors after crossing the outer boundary of an organism. The potential dose is the amount ingested, inhaled, or



applied to the skin. The applied dose is the amount of a substance presented to an absorption barrier and available for absorption (although not necessarily having yet crossed the outer boundary of the organism). The absorbed dose is the amount crossing a specific absorption barrier (e.g., the exchange boundaries of skin, lung, and digestive tract) through uptake processes. Internal dose is a more general term denoting the amount absorbed without respect to specific absorption barriers or exchange boundaries. The amount of a chemical available for interaction by any particular organ or cell is termed the delivered dose for that organ or cell.

**Dose-response relationship** - The resulting biological responses in an organ or organism expressed as a function of a series of doses.

**Dry weight intake rates** - Intake rates that are based on the weight of the food consumed after the moisture content has been removed.

**Employer tenure** - The length of time a worker has been with the same employer.

**Exposed foods** - Those foods that are grown above ground and are likely to be contaminated by pollutants deposited on surfaces that are eaten.

**Exposure duration** - Total time an individual is exposed to the chemical being evaluated.

**Exposure Assessment** - The determination or estimation (qualitative or quantitative) of the magnitude, frequency, or duration, and route or exposure.

**Exposure concentration** - The concentration of a chemical in its transport or carrier medium at the point of contact.

**Exposure pathway** - The physical course a chemical takes from the source to the organism exposed.

**Exposure route** - The way a chemical pollutant enters an organism after contact, e.g., by ingestion, inhalation, or dermal absorption.

**Exposure scenario** - A set of facts, assumptions, and interferences about how exposure takes place that aids the exposure assessor in evaluating estimating, or quantifying exposures.

**Exposure** - Contact of a chemical, physical, or biological agent with the outer boundary of an organism. Exposure is

quantified as the concentration of the agent in the medium in contact integrated over the time duration of the contact.

**Exposure duration** - Length of time over which contact with the contaminant lasts.

**General population** - The total of individuals inhabiting an area or making up a whole group.

**Geometric mean** - The  $n$ th root of the product of  $n$  values.

**Homegrown/home produced foods** - Fruits and vegetables produced by home gardeners, meat and dairy products derived from consumer-raised livestock, game meat, and home caught fish.

**Inhaled dose** - The amount of an inhaled substance that is available for interaction with metabolic processes or biologically significant receptors after crossing the outer boundary of an organism.

**Insensible water loss** - Evaporative water losses that occur during breastfeeding. Corrections are made to account for insensible water loss when estimating breast milk intake using the test weighing method.

**Intake** - The process by which a substance crosses the outer boundary of an organism without passing an absorption barrier (e.g., through ingestion or inhalation).

**Intake rate** - Rate of inhalation, ingestion, and dermal contact depending on the route of exposure. For ingestion, the intake rate is simply the amount of food containing the contaminant of interest that an individual ingests during some specific time period (units of mass/time). For inhalation, the intake rate is the rate at which contaminated air is inhaled. Factors that affect dermal exposure are the amount of material that comes into contact with the skin, and the rate at which the contaminant is absorbed.

**Internal dose** - The amount of a substance penetrating across absorption barriers (the exchange boundaries) of an organism, via either physical or biological processes (synonymous with absorbed dose).

**Interzonal airflows** - Transport of air through doorways, ductwork, and service chaseways that interconnect rooms or zones within a building.

**Lifetime average daily dose** - Dose rate averaged over a lifetime. The LADD is used for compounds with carcinogenic or chronic effects. The LADD is usually



expressed in terms of mg/kg-day or other mass/mass-time units.

**Limiting Tracer Method (LTM)** - Method for evaluating soil ingestion that assumes that the maximum amount of soil ingested corresponds with the lowest estimate from various tracer elements.

**Local circulation** - Convective and advective air circulation and mixing within a room or within a zone.

**Mass-balance/tracer techniques** - Method for evaluating soil intake that accounts for both inputs and outputs of tracer elements. Tracers in soil, food, medicine and other ingested items as well as in feces and urine are accounted for.

**Median value** - The value in a measurement data set such that half the measured values are greater and half are less.

**Moisture content** - The portion of foods made up by water. The percent water is needed for converting food intake rates and residue concentrations between whole weight and dry weight values.

**Monte Carlo technique** - A repeated random sampling from the distribution of values for each of the parameters in a generic (exposure or dose) equation to derive an estimate of the distribution of (exposures or doses in) the population.

**Occupational mobility** - An indicator of the frequency at which workers change from one occupation to another.

**Occupational tenure** - The cumulative number of years a person worked in his or her current occupation, regardless of number of employers, interruptions in employment, or time spent in other occupations.

**Pathway** - The physical course a chemical or pollutant takes from the source to the organism exposed.

**Per capita intake rate** - The average quantity of food consumed per person in a population composed of both individuals who ate the food during a specified time period and those that did not.

**Pica** - Deliberate ingestion of non-nutritive substances such as soil.

**Population mobility** - An indicator of the frequency at which individuals move from one residential location to another.

**Potential dose** - The amount of a chemical contained in material ingested, air breathed, or bulk material applied to the skin.

**Precision** - A measure of the reproducibility of a measured value under a given set of circumstances.

**Preparation losses** - Net cooking losses, which include dripping and volatile losses, post cooking losses, which involve losses from cutting, bones, excess fat, scraps and juices, and other preparation losses which include losses from paring or coring.

**Probabilistic uncertainty analysis** - Technique that assigns a probability density function to each input parameter, then randomly selects values from each of the distributions and inserts them into the exposure equation. Repeated calculations produce a distribution of predicted values, reflecting the combined impact of variability in each input to the calculation. Monte Carlo is a common type of probabilistic Uncertainty analysis.

**Protected foods** - Those foods that have outer protective coatings that are typically removed before consumption.

**Random samples** - Samples selected from a statistical population such that each sample has an equal probability of being selected.

**Range** - The difference between the largest and smallest values in a measurement data set.

**Recreational/sport fishermen** - Individuals who catch fish as part of a sporting or recreational activity and not for the purpose of providing a primary source of food for themselves or for their families.

**Representativeness** - The degree to which a sample is, or samples are, characteristic of the whole medium, exposure, or dose for which the samples are being used to make inferences.

**Residential volume** - The volume ( $m^3$ ) of the structure in which an individual resides and may be exposed to airborne contaminants.

**Residential occupancy period** - The time (years) between a person moving into a residence and the time the person moves out or dies.

**Retail weight equivalent** - Weight of food as sold through retail foodstores; therefore, conversion factors are used to correct carcass weight to retail weight to account for



trimming, shrinkage, or loss of meat and chicken at retail outlets.

**Route** - The way a chemical or pollutant enters an organism after contact, e.g., by ingestion, inhalation, or dermal absorption.

**Sample** - A small part of something designed to show the nature or quality of the whole. Exposure-related measurements are usually samples of environmental or ambient media, exposures of a small subset of a population for a short time, or biological samples, all for the purpose of inferring the nature and quality of parameters important to evaluating exposure.

**Screening-level assessments** - Typically examine exposures that would fall on or beyond the high end of the expected exposure distribution.

**Sensitivity analysis** - Process of changing one variable while leaving the others constant to determine its effect on the output. This procedure fixes each uncertain quantity at its credible lower and upper bounds (holding all others at their nominal values, such as medians) and computes the results of each combination of values. The results help to identify the variables that have the greatest effect on exposure estimates and help focus further information-gathering efforts.

**Serving sizes** - The quantities of individual foods consumed per eating occasion. These estimates may be useful for assessing acute exposures.

**Soil adherence** - The quantity of soil that adheres to the skin and from which chemical contaminants are available for uptake at the skin surface.

**Subsistence fishermen** - Individuals who consume fresh caught fish as a major source of food.

**Test weighing** - A method for estimating breast milk intake over a 24-hour period in which the infant is weighed before and after each feeding without changing its clothing. The sum of the difference between the measured weights over the 24-hour period is assumed to be equivalent to the amount of breast milk consumed daily.

**Total tapwater** - Water consumed directly from the tap as a beverage or used in the preparation of foods and beverages (i.e., coffee, tea, frozen juices, soups, etc.).

**Total fluid intake** - Consumption of all types of fluids including tapwater, milk, soft drinks, alcoholic beverages, and water intrinsic to purchased foods.

**Tracer-element studies** - Soil ingestion studies that use trace elements found in soil and poorly metabolized in the human gut as indicators of soil intake.

**Uncertainty** - Uncertainty represents a lack of knowledge about factors affecting exposure or risk and can lead to inaccurate or biased estimates of exposure. The types of uncertainty include: scenario, parameter, and model.

**Upper percentile** - Values at the upper end of the distribution of values for a particular set of data.

**Uptake** - The process by which a substance crosses an absorption barrier and is absorbed into the body.

**Variability** - Variability arises from true heterogeneity across people, places or time and can affect the precision of exposure estimates and the degree to which they can be generalized. The types of variability include: spatial, temporal, and inter-individual.

**Ventilation rate (VR)** - Alternative term for inhalation rate or breathing rate. Usually measured as minute volume, i.e. volume (liters) of air exhaled per minute.

**Volume of exhaled air ( $V_E$ )** - Product of the number of respiratory cycles in a minute and the volume of air respired during each respiratory cycle (tidal volume,  $V_T$ ).